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ABSTRACT

These guidelines summarize dimensions of students' career planning objectives, and determine what types of career planning activities appear to be most instrumental to them in accomplishing their objectives. A second purpose is to compare the career planning activities important to students with those offered at California State Polytechnic University (Cal Poly). Five major goals are (1) acquiring immediate job seeking skills; (2) gaining knowledge about specific careers; (3) gaining insight into oneself and self/career capability; (4) gaining awareness of lifestyles and work roles; and (5) gaining helpful hints and insights. These goals are matched with five action plans perceived by students as accomplishing each goal. Cal Poly's program is described in the same format. Additional information concerning the selection of a major focuses on employment opportunities in academic areas and such others as business, service, technical and trades. (BN)

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Pepperdine University

Career Planning and Placement

by

Willie D. Adamson

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Education 711 - Student Personnel Services in Community College

Dr. Alice Thurston

April 1978

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Chapter 1

INTRODUCTION

In recent years, career planning programs have become a subject of growing interest to administrators of community colleges and four-year institutions. Notwithstanding this interest, career planning activities vary considerably in practice. Judgments about whether or not these diverse practices are achieving their purposes should be made in terms of the dimensions underlying student interest in career planning and the extent to which various types of programs are seen as achieving individual career planning needs. An assessment of student needs is more often intuitive rather than empirical. The purpose of this paper, then, is to summarize the dimensions of importance underlying students' career planning objectives and to determine what types of career planning activities appear to be the most instrumental to students in accomplishing their objectives. A second purpose is to compare the career planning activities which are important to students in accomplishing their objectives with those actually offered at California State Polytechnic University, Pomona.

Chapter 2

UNDERLYING DIMENSIONS OF CAREER PLANNING

There is general agreement that the objectives of a career planning program should be decided on the basis of students need assessment. Through factor analysis, Ard and Hyder Jr. were able to identify five goals underlying student interest and assessed the likelihood of achieving these goals through participation in various career planning activities. Factor analysis is a technique for analyzing patterns of intercorrelation among many variables, isolating the dimensions to account for these patterns of correlation and to allow inferences concerning the psychological nature of the construct represented by the dimension.[1]

Of the 20,360 undergraduate day students registered in the fall 1975 term at a large southern university, 1,348 completed a career planning questionnaire at the time of preliminary registration for the spring term.[2] Respondents included 691 men and 655 women (two respondents withheld sex identification). All four academic years were represented: 275 freshmen, 263 sophomores, 429 juniors and 381 seniors. These respondents represented all academic areas.

The Career Planning Questionnaire contained two sets of stimulus items: 23 career planning objectives and 18 career planning activities offered on campus. Respondents were asked to rate the importance of each

objective in terms of contributing to their overall career awareness and preparation at that point in their lives. Next, the respondents were asked to select one or more activities, on a 4-point rating scale ranging from no chance to very good chance, through which the important objectives could be achieved by participating in the listed activities.[3] The 23 career planning objectives and 18 career planning activities to achieve objectives are as follows:

CAREER PLANNING OBJECTIVES

1. To be aware of current general career trends, such as the growth and outlook of various career areas, the need for various special skills and training, and the employment market in various career fields.
2. To be aware of the unique problems faced by Blacks and/or women in the job market.
3. To be able to write a good personal resume for use in securing interviews with prospective employers.
4. To have overcome feelings of anxiety associated with meeting and speaking with prospective employers.
5. To receive support from others for career decisions already made.
6. To be knowledgeable about the nature of various careers and existing job requirements.
7. To be knowledgeable about effective job-seeking strategies and to have mapped out my own course of action.
8. To have broadened my world-of-work interest to serve as a basis for subsequent career exploration.
9. To be known to influential individuals who could refer me to appropriate employers.
10. To be aware of nontraditional life-styles and work roles emerging today for both men and women.
11. To be knowledgeable about different world-or-work environments.
12. To have established a personal reference file on campus to be on hand for prospective employers.
13. To have in-depth insight into the job requirements of a specific field of interest and how well I would fit into it.

14. To be knowledgeable about such techniques of interviewing as what questions to ask, when to ask them, how to phrase answers, and in general, to have developed a comfortable, confident interviewing style in order to communicate most effectively.

15. To be aware of my own values, abilities, and skills, and to be able to identify compatible occupations and working environments.

16. To be realistically aware of how my educational experience is serving as preparation for work opportunities.

17. To be able to write effective letters of application to prospective employers.

18. To have insight into the most appropriate job-seeking strategies and hints for entering a specific field.

19. To have developed an awareness and appreciation of the scope and range of career opportunities available in a particular academic area.

20. To have narrowed down my world-of-work interest to serve as a basis for subsequent career exploration.

21. To be able to assert myself favorably in a job interview and related situations.

22. To have insight into how my own interest patterns match those of established practitioners in various fields.

23. To have gained firsthand exposure to the type of work and workers in a particular field of interest.[4]

ACTION PLAN
CAREER PLANNING ACTIVITIES TO ACHIEVE OBJECTIVES

1. Read a newspaper column dealing with occupational information.

2. Watch an audiovisual slide presentation on the employment of women, employment of minorities, and related career planning.

3. Particiapte in a job-seeking skills seminar.

4. Attend an assertiveness training seminar for job-seeking skills to help your effective expression of feelings in the job interview.

5. Have an individual conference with a counselor, a career advisor, a professional working in the area of interest, or an academic advisor about career concerns and job requirements.

6. Attend a career decision-making workshop, which is primarily for students who are undecided about their major or career.

7. Listen to an audiotape made by an academic department regarding careers in a subject area.

8. Have a mock interview.

9. Establish a file containing a data card, information sheet, three recommendations, and a transcript of grades to be used as credentials for a summer job, a part-time job, or a postgraduation job.

10. Take a vocational interest inventory and explore the results with a counselor.

11. Attend a 30-minute resume-writing workshop, at which you will receive instruction on how to prepare a clear statement of your personal qualifications and experiences for prospective employers.

12. Participate in a miniterm, which may be as short as one hour or as long as six hours, designed to allow students to talk with a professional employed in a career of interest.

13. Attend one of the career planning and information courses that are offered for credit in many colleges and schools.

14. Attend a career fair to talk with employers, faculty members, and advisors about career opportunities.

15. Read materials for career information, such as descriptions of specific outlook, earnings, work conditions, or other relevant information.

16. Listen for half an hour to an audiotape to learn how to write a letter of application to an employer.

17. View a 50-minute videotape on techniques of interviewing.

18. Read books, pamphlets, newsletters about new life-styles and career opportunities for men and women.[5]

Through factor analysis, the researchers identified five major goals underlying the importance of ratings of students' planning objectives from the list of career planning objectives and intercorrelations among the 23 objectives. In order to assess the degree to which students perceive various campus activities to be instrumental in leading to the attainment of personal career planning objectives, the 18 activity ratings were related to each of the five major goals derived from the list of career planning objectives.

The researchers' tables of "Rotated Factor Loading of Importance Ratings of Career Planning Objectives, Interrelations of Factor-Importance Scores on the Five Career Planning Scales" and "Ratings of Career Planning Activities and Correlations With Factor-Importance Scores on Five Career Planning Scales" are not included in this paper. Instead, a summarized conclusion of their findings on the basis of the strength of loading on each goal follows:

GOAL I - Acquiring immediate job-seeking skills. Seven items on the list of career planning objectives had substantial loadings on this goal. These seven items communicate the variables operating in this situation. Ranked in order of decreasing benefits to the students, they are as follow:

1. To be able to write effective letters of application to prospective employers (Career Planning Objective No. 17).
2. To be able to write a good personal resume for use in securing interviews with prospective employers (CPO 3).
3. To be knowledgeable about such techniques of interviewing as what questions to ask, when to ask them, how to phrase answers, and in general, to have developed a comfortable, confident interviewing style in order to communicate most effectively (CPO 14).
4. To be able to assert myself favorably in a job interview and related situations (CPO 21).
5. To have insight into the most appropriate job-seeking strategies and hints for entering a specific field (CPO 18).
6. To have overcome feelings of anxiety associated with meeting and speaking with prospective employers (CPO 4).

7. To be knowledgeable about effective job-seeking strategies and to have mapped out my own course of action (CPO 7).

ACTION PLAN I - This plan consists of the set of career planning activities as perceived by the students for accomplishing GOAL I, whether or not they planned to participate. In order of decreasing benefits, the seven activities seen as most important in acquiring immediate job-seeking skills were:

1. Attend an assertiveness training seminar for job-seeking skills to help your effective expression of feelings in the job interview (Career Planning Activity No. 4).
2. Attend a 30-minute resume-writing workshop, at which you will receive instruction on how to prepare a clear statement of your personal qualifications and experiences for prospective employers (CPA 11).
3. Participate in a job-seeking skills seminar (CPA 3).
4. View a 50-minute videotape on techniques of interviewing (CPA 17).
5. Have a mock interview (CPA 8).
6. Listen for half an hour to an audiotape to learn how to write a letter of application to an employer (CPA 16).
7. Establish a file containing a data card, information sheet, three recommendations, and a transcript of grades to be used as credentials for a summer job, a part-time job, or a postgraduation job (CPA 9).

GOAL II - Gaining knowledge about specific careers. Five items on the list of career planning objectives had substantial loadings on this goal. Ranked in order of decreasing benefits to the students, they are as follow:

1. To be knowledgeable about the nature of various careers and existing job requirements (CPO 6).

2. To be aware of current general career trends, such as the growth and outlook of various career areas, the need for various special skills and training, and the employment market in various career fields (CPO 1).

3. To have in-depth insight into the job requirements of a specific field of interest and how well I fit into it (CPO 13).

4. To be knowledgeable about effective job-seeking strategies and to have mapped out my own course of action (CPO 7).

5. To have broadened my world-of-work interest to serve as a basis for subsequent career exploration (CPO 8).

ACTION PLAN II - This plan consists of the set of career planning activities as perceived by students for accomplishing GOAL II, whether or not they planned to participate. Ranked in order of decreasing benefits, the four activities seen as most important in gaining knowledge about specific careers were:

1. Read materials for career information, such as descriptions of specific outlook, earnings, work conditions, or other relevant information (CPA 15).

2. Participate in a job-seeking skills seminar (CPA 3).

3. Attend an assertiveness training seminar for job-seeking skills to help your effective expression of feelings in the job interview (CPA 4).

4. Have an individual conference with a counselor, a career advisor, a professional working in the area of interest, or an academic advisor about career concerns and job requirements (CPA 5).

GOAL III - Gaining insight into oneself and self-career capability. Seven items on the list of career planning objectives had substantial loadings on this goal. Ranked in order

of decreasing benefits to students, they are as follow:

1. To be realistically aware of how my educational experience is serving as preparation for work opportunities (CPO 16).

2. To have insight into how my own interest patterns match those of established practitioners in various fields (CPO 22).

3. To have in-depth insight into the job requirements of a specific field of interest and how well I would fit into it (CPO 13).

4. To have gained firsthand exposure to the type of work and workers in a particular field of interest (CPO 23).

5. To be aware of my own values, abilities, and skills, and to be able to identify compatible occupations and working environments (CPO 15).

6. To have developed an awareness and appreciation of the scope and range of career opportunities available in a particular academic area (CPO 19).

7. To have narrowed down my world-of-work interest to serve as a basis for subsequent career exploration (CPO 20).

ACTION PLAN III - This plan consists of the set of career planning activities as perceived by students for accomplishing GOAL III, whether or not they planned to participate. Ranked in order of decreasing benefits to students, the four career planning activities seen as most important in gaining insight into oneself and self-career compatibility were:

1. Attend an assertiveness training seminar for job-seeking skills to help your effective expression of feelings in the job interview (CPA 4).

2. Participate in a job-seeking skills seminar (CPA 3).

3. Have an individual conference with a counselor, a career advisor, a professional working in the area

of interest, or an academic advisor about career concerns and job requirements (CPA 5).

4. Establish a file containing a data card, information sheet, three recommendations and a transcript of grades to be used as credentials for a summer job, a part-time job, or a postgraduation job (CPA 9).

GOAL IV - Gaining an awareness of emerging nontraditional life-styles and work roles. Only three items on the list of career planning objectives had substantial loadings on this goal. Ranked in order of decreasing benefits to students, they are as follow:

1. To be aware of nontraditional life-styles and work roles emerging today for both men and women (CPO 10).
2. To be knowledgeable about different world-of-work environments (CPC 11).
3. To be aware of the unique problems faced by Blacks and/or women in the job market (CPO 2).

ACTION PLAN IV - This plan consists of the set of career planning activities as perceived by students for accomplishing GOAL IV, whether or not they planned to participate. Ranked in order of decreasing benefits, the two career planning activities seen as most important in gaining awareness of emerging nontraditional life-styles and work roles were:

1. Watch an audiovisual slide presentation on the employment of women, employment of minorities, and related career planning (CPA 2).
2. Read books, pamphlets, newsletters about new life-styles and career opportunities for men and women (CPA 18).

GOAL V - Gaining helpful hints and insights. Three items on the list of career planning objectives had substantial loadings on this goal. Ranked in order of decreasing benefits to students, they are as follow:

1. To have insight into the most appropriate job-seeking strategies and hints for entering a specific field (CPO 18).
2. To be known to influential individuals who could refer me to appropriate employers (CPO 9).
3. To have insight into how my own interest patterns match those of established practitioners in various fields (CPO 22).

ACTION PLAN V - Same as Action Plan I.

On the basis of these results, the researchers recommended a multipurpose career planning program designed to assist students in acquiring self-insight, knowledge of specific careers, and immediate job-seeking skills as a minimum. This minimum criteria will be used to evaluate career planning activities at California State Polytechnic University at Pomona.

Cal Poly Career Planning Activities

The Career Planning and Placement Center emphasizes developing a practical plan for seeking a career position that will equip students to conduct their own career search throughout life. The center coordinates the career planning and placement of students and qualified alumni. Placement services include job and career counseling, accumulating credentials and references, providing career literature and information on training opportunities and scheduling job interviews.

The center hosts representatives of industry, school, government, business and other employers and agencies, and arranges for lectures and discussions as well as employment interviews. The center also notes and reports to the faculty employment trends and other data which may be helpful in curricular innovation and improvement. The center's goals and services offered, as documented from its literature and actually observed, are presented below and in the same order as presented in the research study to facilitate comparison.

GOAL I - Assist students in developing job-seeking skills.

ACTION PLAN I - This plan consists of the career planning services offered by the Career Planning and Placement Center for accomplishing GOAL I. These services are as follow:

1. A one-hour "How To Interview" workshop and to practice assertive techniques.
2. A one-hour "Resume-Writing" workshop and/or the center's guide to resume writing.
3. An "Effective Job Hunting Techniques" workshop and job hunting books.
4. A videotape practice interview.
5. A practice interview with a counselor.
6. Letter of application. It is obsolete.
7. Assist in finding part-time, temporary, summer, vacation, cooperative education, internship, and work-study positions for students.
8. A two-hour workshop on "Summer Jobs With Federal and Stage Agencies".
9. A one-hour workshop on "On-Campus Recruiting".
10. Workshop on student employment, job market teachers, and special programs for women and minorities.

GOAL II - Assist students in acquiring knowledge about specific careers.

ACTION PLAN II - This plan consists of the career planning services offered by the Career Planning and Placement Center for accomplishing GOAL II. These services are as follow:

1. The Career Resources Library has written career information on specific careers. Additionally, the computer career guidance system allows students to obtain career information for more than 240 different occupations (i.e. definition of occupation, educational requirements, income, personal satisfactions, conditions of work, etc.).
2. An "Effective Job Hunting Techniques" workshop and job hunting books.
3. Attend an assertiveness training workshop.
4. Career advisors and faculty members will discuss the student's career concerns about occupations and job requirements.
5. Provide multi media career information including a collection of video tapes about various academic majors.
6. Provide special interest information for women, minorities, and potential graduate students.
7. Interpret supply and demand information.

GOAL III - Assist students in acquiring insight into oneself and self-career compatibility.

ACTION PLAN III - This plan consists of the career planning services offered by the Career Planning and Placement Center for accomplishing GOAL III. These services are as follow:

1. A one-hour "How To Interview" workshop.
2. A workshop on "Effective Job Hunting Techniques" and read job hunting books.

3. Career advisors are available to discuss career goals and alternatives.

4. Provide vocational interest testing and personality assessment counseling.

5. "Skill Identification" workshop.

6. A "Career Planning" workshop.

7. A computer career guidance system is available to assist students in making educational plans, predict chosen occupational success and to develop a plan of action.

8. Provide multi media career information about various academic majors.

9. Provide special interest information for women, minorities, and potential graduate students.

GOAL IV - Gaining an awareness of emerging nontraditional life-styles and work roles.

ACTION PLAN IV - None.

The career planning services offered by Cal Poly's Career Planning and Placement Center, to enable students to achieve GOAL I through GOAL III, exceed the career planning activities delineated in the research study. The center's offerings exert the major impact on these significant goals and, in turn, these goals exert a major impact on career planning objectives and the associated enabling action plans. To this end, more than twenty-five human development workshops were offered during the winter quarter 1978.

The workshops and/or seminars offered during the winter quarter 1978 emphasized job seeking skills, self-insight and career information. However, not one workshop was offered on gaining an awareness of emerging nontraditional life-styles and work rules. Moreover, career planning

activities should be directed toward the overall needs of the students. In order to serve these overall needs, the career counseling staff should begin to broaden and blend its expertise and training so that the career planning program will emerge as an integrated whole. To this end, career planning should also be viewed as an enabling process which helps students understand emerging nontraditional life-styles (e.g., cohabiting and single parents, etc.) and work roles (e.g., women as engineers and truck drivers, and men as telephone operators and nurses).

Chapter 3

CAL POLY'S PRINCIPLES OF CAREER PLACEMENT

During 1977 over 300 employers held on-campus interviews at Cal Poly. Moreover, a follow-up of 1976-1977 graduates reported 80 percent employment; 68% percent of which was in a field related to their major. To this end, I wondered how many of our graduates were placed into jobs which are going to help them grow and move on into satisfactory careers. To evaluate how well our students were placed, I developed a list of 20 questions to ask placement. Nine of the more relevant questions and answers follow:

Q. Do you help students find jobs or do you help them launch careers?

A. We don't push students into a career. We empower students to help themselves.

Q. How do you help students to become as proficient as possible in presenting themselves to employers?

A. We have workshops on interviewing techniques and resume writing.

Q. Do you believe that students should make their own decisions?

A. Yes. We assist the student in accumulating a profile, not only to find a career, but to find themselves.

Q. What do employers think of Cal Poly students?

A. Employers have a high regard for our students as measured by the number of employers coming to our campus, level of recruiting, job listings and employment.

Q. Do you help students pursue job offers other than those listed with the placement center?

A. Our workshop on effective job hunting techniques enables students to pursue job offers anywhere.

Q. Do you have a philosophy of placement?

A. Yes.

Q. How do you help students who lack effective decision making skills?

A. We have career planning workshops and a career guidance system. Students learn about themselves while they are learning about different careers.

Q. How do you evaluate your services?

A. By questionnaire.

Q. Is the center's existence and purpose publicized?

A. We maintain a high profile as measured by the number of students requesting our services.

On the basis of these questions and answers, I have concluded that our Career Planning and Placement Center is helping our students launch careers, find career pathways, and enter beginning situations in which they can grow and develop. To this end, the center is helping our students to be as knowledgeable as possible about the job market; helping them become as proficient as possible in presenting themselves to prospective employers; and understanding the kinds of knowledge and skills that they ought to be equipped with.

Chapter 4

SOME SIGNIFICANT FACTORS INFLUENCING THE SELECTION OF A MAJOR

A common problem faced by many students at both community colleges and four-year institutions is the selection of an academic major. The information needed to make such a decision is probably manifold. However, the following questions serve as a rough criteria in the selection of an academic major:

1. What are my values?
2. What occupations fit my values?
3. What skills (ability) do I possess?
4. Can I commit myself to a specific academic major and demonstrate an acceptable level of compentence upon graduation as measured by grade-point average?
5. What are the occupational trends and economic outlook for the occupations that I am considering.

This discussion will address itself to question five and places certain emphasis on question four. Therefore, it is assumed that the student has assessed his values, selected an occupation which is consistent with his values, and has identified his skills. The remaining task is for him to predict his grades, evaluate occupational trends and assess the economic outlook for his chosen occupational major.

Employment Opportunities

To evaluate occupational trends, the Career Planning and Placement Center implemented an ongoing follow-up survey of each quarter's graduates

in early 1977. The survey results from graduates of December 1976, March 1977 and June 1977 are shown in Table I. Graduates are categorized in Table I in terms of: Job Related to Major Employment; Non-Related Employment; Unemployed; Continuing Education; and Other Activity.

To enhance the usefulness of the information presented in Table I, the information has been recasted in Table II into a probability distribution over placement events that have occurred in the past and those that are likely to occur in the future. For each academic and/or occupational major shown in Table II, the probability distribution is given in terms of: Job Related to Major Employment; Non-Related Employment; Unemployed; Continuing Education; and Other Activity. In the selection of an academic and/or occupational major, knowledge, insofar as a prosepctive job-related to major employment is concerned, is represented by the student's probability distribution over successful placement events that have occurred in the past and those that may occur in the future. Moreover, these future placement events cannot be directly observed, but probability distributions over these events depend upon the student's knowledge about the past. For example, of the 42 accounting majors shown in Table I, 38 have jobs which are related to their major. Table II says that if the student's academic major is accounting and his or her grades are good, there is a .905 probability that he or she will be able to find job related to major employment. With this object, the information presented in Table II should be useful to students in selecting their academic majors, since reductions in the uncertainty with respect to past placement events in a particular academic and/or occupational major reduces the uncertainty with respect to future placement events.

TABLE I

ANNUAL FOLLOW-UP OF GRADUATES
ACADEMIC YEAR 1976 77

	Total for Statistics	Job Related to Major	Non-Related Employment	Unemployed	Continuing Education	Other
December 1976	185	144	24	4	13	0
March 1977	252	153	35	13	48	3
June 1977	432	298	48	22	45	19
TOTAL UNIVERSITY	869	595	107	39	106	22
SCHOOL OF AGRICULTURE						
Agricultural Biology	2	1		1		
Agricultural Business Management	22	15	4	1	1	1
Agricultural Engineering	0					
Agronomy	2	2				
Animal Science	27	14	6	1	6	
Foods & Nutrition	3	2	1			
Fruit Industries	0					
Home Economics	23	12	2	2	5	2
International Agriculture	0					
Ornamental Horticulture	27	21	1	1	3	1
Park Administration	19	18	1			
Soil Science	6	5	1	—	—	—
TOTAL	131	90	16	6	15	4
SCHOOL OF ARTS						
Anthropology/Geography	1		1			
Art	5	2	2	1		
Behavioral Science	51	18	17	4	10	2
Communication Arts	12	6	3	1	1	2
Drama	2		1		1	
Economics	3	2			1	
English	8	3	1	1	3	
History	13	1	8		4	
Humanities						
Liberal Studies	26	6		2	16	1
Music	3		2		1	
Philosophy	1				1	
Physical Education	18	2	3	1	11	1
Political Science	16	1	8	2	6	
Recreation Administration	9	7		1	1	
Social Science	14	3	5	1	5	
Social Service	15	7			4	4
MAST./CRED. EDUCATION	8	8	—	—	—	—
TOTAL	205	64	53	14	64	10
SCHOOL OF BUSINESS						
Accounting	42	38		2	1	1
Business Management	79	61	6	6	4	2
Information Systems	21	21				
Finance, Insurance and Real Estate	12	6	4	2		
Hotel & Restaurant Mgmt.	19	17	2			
Marketing	12	11	1			
MASTER BUSINESS ADMINISTRATION	16	16	—	—	—	—
TOTAL	201	170	13	10	5	3
SCHOOL OF ENGINEERING						
Aerospace Engineering	5	5				
Chemical Engineering	9	9				
Civil Engineering	28	24	1		3	
Electrical and Electronic Engineering	41	36	1		4	
Engineering Technology	63	59	2	1	1	
Industrial Engineering	8	5		1	1	1
Mechanical Engineering	29	28			1	
MASTER OF ENGINEERING	9	9	—	—	—	—
TOTAL	192	175	4	2	10	1
SCHOOL OF ENVIRONMENTAL DESIGN						
Architecture	19	18			1	
Landscape Architecture	19	18	1			
Urban Planning	18	15	2	1		
MASTER OF ARCHITECTURE	4	3		1		
MASTER OF URBAN PLANNING	2	2	—	—	—	—
TOTAL	62	56	3	2	1	0
SCHOOL OF SCIENCE						
Biology	35	15	10	2	6	2
Botany	5	2		1	1	1
Chemistry	4	3	1			
Computer Science	0					
Earth Science	5	3	1	1		
Mathematics	8	3		1	3	1
Microbiology	9	7	1		1	
Physics	2	1	1			
Zoology	8	4	4			
MASTER OF SCIENCE IN BIOLOGICAL SCIENCES	2	2	—	—	—	—
TOTAL	78	40	18	5	11	4

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TABLE II

Probability Distribution

School	Number of Respondents	Probability: Job Related To Major	Non-Related Employment	Unemployed	Continuing Education	Other Activity	Avg. Salary/ Month
TOTAL UNIVERSITY	869	.685	.123	.045	.122	.025	NA
SCHOOL OF AGRICULTURE							
Agricultural Biology	2	.500	----	.500	----	----	$ 500 N=1
Agricultural Business Mgmt.	22	.682	.183	.045	.045	.045	1043 N=13
Agronomy	2	1.000	----	----	----	----	900 N=1
Animal Science	27	.519	.222	.037	.222	----	714 N=16
Food & Nutrition	3	.667	.333	----	----	----	756 N=2
Home Economics	23	.522	.087	.087	.217	.087	647 N=10
Ornamental Horticulture	27	.778	.037	.037	.111	.037	836 N=17
Park Administration	19	.947	.057	----	----	----	966 N=15
Soil Science	6	.833	.167	----	----	----	801 N=15
SCHOOL OF ARTS							
Anthropology/Geography	1	----	1.000	----	----	----	$ 650 N=1
Art	5	.400	.400	.200	----	----	650 N=3
Behavioral Science	51	.353	.333	.079	.196	.039	905 N=25
Communication Art	12	.417	.250	.083	.083	.167	899 N=5
Drama	2	----	.500	----	.500	----	625 N=1
Economics	3	.667	----	----	.333	----	---
English	8	.375	.125	.125	.375	----	510 N=1
History	13	.077	.615	----	.308	----	919 N=7
Liberal Studies	26	.192	.077	.077	.615	.039	819 N=3
Music	3	----	.667	----	.333	----	710 N=2
Philosophy	1	----	----	----	1.000	----	---
Physical Education	18	.111	.167	.056	.611	.055	712 N=2
Recreation Administration	9	.778	----	.111	.111	----	467 N=3
Social Science	14	.214	.357	.072	.357	----	598 N=3
Social Service	15	.467	----	----	.267	.266	885 N=7
MAST. CRED EDUCATION	8	1.000	----	----	----	----	1950 N=1

School	Number of Respondents	Probability: Job Related To Major	Non-Related Employment	Unemployed	Continuing Education	Other Activity	Avg. Salary/ Month
SCHOOL OF BUSINESS							
Accounting	42	.905	----	.048	.024	.023	$ 942 N=34
Business Management	79	.772	.076	.076	.051	.025	970 N=49
Data Processing/MIS	21	1.000	----	----	----	----	968 N=18
Finance, Insurance & R.E.	12	.500	.333	.167	----	----	1300 N=6
Hotel & Restaurant Mgmt.	19	.895	.105	----	----	----	890 N=17
Marketing	12	.917	.083	----	----	----	941 N=9
MASTER BUSINESS ADMIN.	16	1.000	----	----	----	----	1427 N=11
SCHOOL OF ENGINEERING							
Aerospace Engineering	5	1.000	----	----	----	----	$ 1143 N=5
Chemical Engineering	9	1.000	----	----	----	----	1435 N=7
Civil Engineering	28	.857	.036	----	.107	----	1140 N=22
Electrical & Electronic Eng.	41	.878	.024	----	.098	----	1173 N=35
Engineering Technology	63	.937	.032	.016	.015	----	1194 N=60
Industrial Engineering	8	.625	----	.125	.125	.125	1129 N=4
Mechanical Engineering	29	.966	----	----	.034	----	1229 N=24
MASTER OF ENGINEERING	9	1.000	----	----	----	----	1570 N=2
SCHOOL OF ENVIRONMENTAL DESIGN							
Architecture	19	.947	----	----	.053	----	$ 934 N=15
Landscape Architecture	19	.947	.053	----	----	----	747 N=17
Urban Planning	18	.833	.111	.056	----	----	894 N=14
MASTER OF ARCHITECTURE	4	.750	----	.250	----	----	1053 N=3
MASTER OF URBAN PLANNING	2	1.000	----	----	----	----	
SCHOOL OF SCIENCE							
Biology	35	.429	.286	.057	.171	.057	$ 754 N=16
Botany	5	.400	----	.200	.200	.200	925 N=2
Chemistry	4	.750	.250	----	----	----	733 N=3
Earth Science	5	.600	.200	.200	----	----	850 N=1
Mathematics	8	.375	----	.125	.375	.125	1062 N=2
Microbiology	9	.778	.111	----	.111	----	861 N=5
Physics	2	.500	.500	----	----	----	1100 N=1
Zoology	8	.500	.500	----	----	----	773 N=5
MS IN BIOLOGY	2	1.000	----	----	----	----	----

The information shown in Table II should not be viewed as an end in itself. Instead, it should be used in conjunction with other corroborating information which considers the local and national economic outlook for those occupations. The information presented in Table III was obtained from the California Manpower Management Information System and supports several conclusions drawn from Table II.

The outlook for jobs in the business area, both nationally and in California is good. Employment in business is expected to grow faster than the average for all occupations. In banking and accounting, persons with some knowledge of computer science will be in particular demand.

Engineering will account for 14% of all professional jobs in California between 1978 and 1980. The demand is increased by the shortage of graduates in the first half of the current decade when students avoided engineering due to widely publicized cutbacks in California's aerospace industry.

The largest proportion of job opportunities between now and 1980 will be for clerical workers. In California, clerical jobs will represent 29% of all job openings or one-fifth of all jobs in the state. In Table III, the replacement needs for restaurant managers, salespersons and clerical workers are twice as great as the growth opportunities. A few specialties such as keypunch operators and stenographers are declining due to technological change, but the decline is more than offset by growth in other clerical areas. Clerical jobs, salespersons and certain jobs as managers do not require senior college degrees for entry level and that has strong implications for community colleges.

TABLE III

Los Angeles County Job Opportunities
Growth, Replacement and Average Annual Openings to 1980

JOB	Growth	Replacement	Total	Average Annual Openings in L.A. County to 1980
		PROFESSIONAL & TECHNICAL		
ACCOUNTANTS	4,315	7,224	11,539	2,308
BUSINESS MANAGERS	22,069	27,215	49,284	9,857
BUYERS, WHOLESALE	1,575	2,323	3,898	780
ESCROW OFFICERS	2,786	2,434	5,220	1,044
HOTEL-MOTEL MANAGERS	22,069	27,215	49,284	9,857
INSURANCE SALESPERSONS	2,149	2,870	5,019	1,004
LOAN OFFICERS	2,786	2,434	5,220	1,044
OFFICE MANAGERS	2,594	2,707	5,301	1,060
PURCHASING AGENTS	978	1,274	2,252	450
REAL ESTATE SALESPERSONS	1,552	4,657	6,209	1,242
RESTAURANT MANAGERS	849	2,720	3,569	714
SALESPERSONS	27,495	54,594	82,089	16,418
SALES MANAGERS	1,555	2,852	4,407	881
SECURITIES SALESPERSONS	579	744	1,323	265
ENGINEERS (ALL SPECIALTIES)	7,066	5,868	12,934	2,587
AEROSPACE ENGINEERS	538	923	1,461	292
CHEMICAL ENGINEERS	36	119	153	31
CIVIL ENGINEERS	585	780	1,365	273
ELECTRICAL AND ELECTRONIC ENGINEERS	1,884	1,081	2,965	593

JOB	Growth	Replacement	Total	Average Annual Openings in L.A. County to 1980
		PROFESSIONAL & TECHNICAL		
INDUSTRIAL ENGINEERS	1,219	852	2,071	414
MECHANICAL ENGINEERS	655	794	1,449	290
PETROLEUM ENGINEERS	57	43	100	20
DRAFTERS	1,400	1,220	2,620	524
ELECTRICAL AND ELECTRONIC TECHNICIANS	2,071	711	2,782	556
MECHANICAL ENGINEERING TECHNICIANS	25	59	84	17
SURVEYORS	170	112	282	56
		CLERICAL WORKERS		
BANK TELLERS	1,613	4,391	6,004	1,201
BOOKKEEPERS	6,210	22,693	28,903	5,781
CASHIERS	3,166	10,547	13,713	2,743
DUPLICATING MACHINE OPERATORS	133	400	533	107
FILE CLERKS	1,396	7,336	8,732	1,746
KEYPUNCH OPERATORS	-419	4,046	3,627	725
LEGAL SECRETARIES	1,768	2,870	4,638	928
LIBRARY ASSISTANTS	716	1,915	2,631	526
MEDICAL SECRETARIES	1,390	1,764	3,154	631
RECEPTIONISTS	2,132	7,408	9,540	1,908
SECRETARIES	17,133	48,314	65,447	13,089
STATISTICAL CLERKS	796	3,344	4,140	828
STENOGRAPHERS	-385	1,569	1,184	237
TYPISTS	5,929	23,622	29,542	5,908

Table IV shows the Bureau of Labor Statistics national survey on employment trends between now and 1985 for certain occupations. Young people looking for work in the years just ahead will find their best bets in such fast-growth areas as clerical work, the computer field, environmental activities and medicine.

But competition will be a lot more keen in such fields as photography, newspaper reporting and teaching. And demand for historians, political scientists and sociologists will be downright sluggish.

The study expects that the nation will find room for another 42.8 million men and women in the work force by 1985. Growth in the economy will account for more than a third of the job openings; replacing workers who die or retire will account for the rest. Clerical workers such as cashiers, receptionists, secretaries and banking clerks will be in rising demand. The number of bill collectors will jump, a good field for "aggressive and personable people," the handbook says. Service workers--cooks, guards, police officers and nursing aides--will be in big demand, too.

Among professional and technical occupations, the outlook is good in such fields as computers, environmental protection and medicine. But the growth in job openings will be uneven. Technological changes will decrease the need for meatcutters and telephone operators, for instance, as well as compositors in printing shops.[6]

The information presented in Table IV should be useful to students and career counselors in determining which occupations offer the best bets for employment in years ahead.

TABLE IV

National Occupational Outlook: Average Annual Openings To 1985

	Latest Employment (1976 estimate)	Average Annual Openings to 1985
Singers	23,000	1,200
CLERICAL		
Bank clerks	456,000	36,000
Bank tellers	310,000	21,000
Bill, account collectors	64,000	4,400
Bookkeepers	1,700,000	95,000
Cashiers	1,250,000	92,000
File clerks	270,000	16,000
Hotel clerks	62,000	3,300
Insurance adjusters	155,000	7,700
Library assistants	143,000	8,300
Mail carriers	250,000	5,300
Medical-records clerks	57,000	9,000
Office-machine operators	163,000	7,700
Postal clerks	270,000	3,700
Receptionists	500,000	38,000
Shipping clerks	440,000	23,000
Secretaries, stenographers	3,500,000	295,000
Statistical clerks	337,000	21,000
Stock clerks	490,000	25,000
Airline reservation, ticket, passenger agents	51,000	2,900
Typists	1,000,000	63,000
SALES		
Auto salespersons	130,000	9,000
Insurance agents, brokers	490,000	27,500
Real-estate salesmen, brokers	450,000	45,500
Retail-trade salesworkers	2,725,000	155,000
Securities salespersons	90,000	5,500
Wholesale-trade salesworkers	808,000	41,000
Manufacturers' salesmen	362,000	17,600
Travel agents	15,000	1,400
SERVICES		
Airline flight attendants	42,000	6,000
Auto-service advisors	24,000	1,000
Barbers	124,000	8,100
Bartenders	261,000	17,800
Building custodians	2,100,000	160,000
Hotel bellhops, captains	16,600	600
Cooks, chefs	1,065,000	79,000
Cosmetologists	534,000	30,000
Dishwashers, busboys	442,000	22,400
Firefighters	210,000	8,300
Food-counter workers	421,000	33,000
Gasoline-station attendants	420,000	14,800
Government construction inspectors	22,000	2,300
Government regulatory inspectors	115,000	7,900
Guards	500,000	63,300
Homemakers, and home, health aides	70,000	37,000
Hotel housekeepers, assistants	17,000	1,100
Jailers	90,000	6,900
Motion-picture projectionists	16,500	1,200
Police officers	500,000	32,500
Private-household workers	1,125,000	53,000
State-police officers	48,000	1,900
Waiters, waitresses	1,260,000	71,000
Social-service aides	100,000	7,500
BUILDING TRADES		
Bricklayers	175,000	7,500
Carpenters	1,010,000	67,000
Cement masons	71,000	7,500
Construction electricians	260,000	13,700
Construction laborers	715,000	40,000
Floor-covering installers	85,000	3,200
Glaziers	10,000	600
Ironworkers	71,000	6,500
Painters	410,000	27,000
Operating engineers	585,000	41,000
Plasterers	24,000	900
Plumbers and pipe fitters	385,000	30,000
Roofers	90,000	6,300
Tile setters	36,000	1,800
Paperhangers	15,000	2,400
Sheet-metal workers	65,000	2,600
MACHINE OCCUPATIONS		
Instrument makers	6,000	300
Machine-tool operators	508,000	22,000
Machinists	405,000	20,000
Metal molders	53,000	1,900
Patternmakers	18,000	900
Setup workers	60,000	3,500
Tool-and-die makers	183,000	9,000
MECHANICS AND REPAIRMEN		
Air-conditioning, heating mechanics	175,000	17,400
Aircraft mechanics	110,000	5,200
Appliance repairers	144,000	7,000
Auto-body repairers	174,000	6,000
Auto mechanics	790,000	32,000
Blacksmiths	10,000	100
Diesel mechanics	100,000	5,000
Farm-equipment mechanics	66,000	4,000
Forge-shop occupations	71,000	2,700
Industrial-machinery repairers	320,000	30,000
Millwrights	96,000	3,600
TV, radio service technicians	114,000	6,700
Truck, bus mechanics	145,000	6,900
Office-machine repairers	58,000	3,400
Watch repairers	21,000	1,500
PRINTING		
Bookbinders	60,000	3,400
Composing-room occupations	152,000	3,600
Electrotypers, stereotypers	4,000	60
Photoengravers, lithographers	39,000	2,100
Printing pressmen	145,000	5,100
TELEPHONE INDUSTRY		
Central-office craft workers	135,000	5,000
Linemen, cable splicers	54,000	600
Installers, repairers	110,000	4,000
Operators	340,000	11,600
OTHER CRAFTS		
Boilermakers	34,000	3,800
Dispensing opticians	14,500	1,300
Foremen	1,445,000	79,000
Furniture upholsterers	27,000	1,100
Jewelers	19,000	1,300
Locomotive engineers	33,300	2,400
Maintenance electricians	300,000	15,900
Shoe repairmen	25,000	1,600
Railroad conductors	35,900	2,200
DRIVING OCCUPATIONS		
Intercity-bus drivers	25,000	1,400
Transit-bus drivers	81,000	5,100
Route drivers	200,000	3,400
Taxi drivers, chauffeurs	94,000	4,200
Lease truck drivers	1,600,000	73,000
Long-distance truck drivers	467,000	15,400
Parking attendants	38,000	2,500
Fork-lift operators	360,000	14,600
OTHER OPERATIVES		
Insulation workers	30,000	29,000
Assemblers	1,100,000	70,000
Automobile painters	32,000	1,300
Factory inspectors	692,000	52,000
Meatcutters	215,000	4,900
Photo-lab occupations	35,000	2,400
Production painters	104,000	6,900
Railroad shopworkers	72,600	800
Railroad signal workers	11,500	400
Railroad track workers	56,200	800
Stationary engineers	194,000	7,400
Waste-water-treatment workers	100,000	10,400
Welders, arc cutters	660,000	33,800
FARM WORKERS	2,823,000	200,000

	Latest Employment (1976 estimate)	Average Annual Openings to 1985
ALL OCCUPATIONS	87,485,000	5,100,000
ADMINISTRATION		
Accountants	865,000	51,500
Bank officers, managers	319,000	28,000
Health administrators	160,000	16,000
Buyers	109,000	5,700
City managers	3,000	250
Credit managers	53,000	2,500
Hotel managers, assistants	137,000	7,000
Public-relations workers	115,000	8,300
Purchasing agents	192,000	13,800
Urban planners	16,000	1,100
COMPUTER SPECIALISTS		
Programers	230,000	9,700
Systems analysts	160,000	7,600
Computer operators	565,000	8,500
Data-machine repairers	50,000	5,200
ENGINEERS		
Aerospace	50,000	1,500
Agricultural	12,000	6,000
Chemical	50,000	2,100
Civil	155,000	8,900
Electrical	300,000	12,800
Industrial	200,000	10,500
Mechanical	200,000	9,300
Metallurgical	17,000	900
Mining	6,000	600
Petroleum	20,000	1,300
TEACHERS		
College	5[illegible]000	17,000
Kindergarten, elementary-school	1,364,000	70,000
Secondary-school	1,100,000	13,000
School counselors	43,000	1,500
Teachers' aides	320,000	29,000
MATHEMATICS		
Actuaries	9,000	500
Mathematics	38,000	1,000
Statisticians	24,000	1,500
SCIENTISTS		
Astronomers	2,000	40
Biochemists	12,700	600
Geologists	34,000	2,300
Chemists	150,000	6,300
Geophysicists	12,000	800
Life scientists	205,000	12,000
Meteorologists	5,500	200
Oceanographers	2,700	150
Physicists	48,000	1,100
MERCHANT MARINE		
Officers	13,300	600
Sailors, deckhands	33,200	400
HEALTH SERVICE		
Physicians, osteopaths	375,000	21,800
Chiropractors	18,000	1,600
Dentists	112,000	4,800
Dental hygienists	27,000	5,100
Dental assistants	135,000	13,500
Emergency medical technicians	287,000	37,000
Optometrists	19,700	1,500
Podiatrists	7,500	500
Registered nurses	960,000	83,000
Pharmacists	120,000	8,900
Medical-lab workers	240,000	20,000
X-ray technologists	80,000	6,300
Dietitians	45,000	2,800
Veterinarians	30,500	1,800
Nurses' aides, orderlies	1,000,000	83,000
Licensed practical nurses	460,000	53,000
SOCIAL SCIENCES		
Anthropologists	3,500	200
Economists	115,000	6,400
Geographers	10,000	600
Historians	22,500	900
Political scientists	14,000	400
Psychologists	90,000	5,600
Sociologists	19,000	800
TECHNICIANS		
Drafters	320,000	16,500
Engineering, science technicians	586,000	29,000
Forestry technicians	11,000	600
Soil conservationists	7,500	400
Surveyors	52,000	3,500
OTHER PROFESSIONS		
Actors	13,000	600
Airplane pilots	83,000	4,100
Air-traffic controllers	21,000	1,100
Architects	49,000	3,100
Commercial artists	67,000	3,600
Dancers	8,000	500
Foresters	25,000	1,100
Funeral directors, embalmers	45,000	2,200
Home economists	141,000	6,100
Industrial designers	12,000	500
Lawyers	396,000	23,400
Librarians	128,000	8,000
Newspaper reporters	40,500	2,100
Radio, TV announcers	26,000	1,300
Social workers	330,000	25,000
Musicians, composers	127,000	7,200
Personnel, labor relations	335,000	23,000
Photographers	85,000	3,700

Predicted Grade-Point Average

It is relatively easy to identify occupations where there are employment opportunities. A more difficult task is for the student to meet the employer's criterion as to grade-point average. The information presented in Table II and Table III presupposes an acceptable grade-point average. To the employer, the student's grade-point average proves his competence in his field.

In the study of accounting, for example, a student may establish three levels of competence: thorough knowledge, familiarization, and general understanding. In the areas in which thorough knowledge is required, the undergraduate major should become an expert. Where familiarization is required, he should be able to participate in effective teamwork with the experts or call for assistance as needed in his work. In the areas requiring general understanding, the undergraduate accounting major should know how matters in these areas will relate to and affect his work. The minimum acceptable grade-point averages for entry level positions in accounting are as follow:

Big Eight CPA Firms	3.5
Regional CPA Firms	2.7
Industry	2.8
Government	3.0

The inability of the student to predict his or her grades accurately in many programs of study usually result into unemployment and anxiety after graduation.

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[6]"Official Look at Where Jobs Will Open Up in Next Few Years," U.S. News & World Report, Volume LXXXIV, No. 13, April 3 1978, pp. 80-81.